

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/588,052
Source: IFWP
Date Processed by STIC: 8/10/06

ENTERED



IFWP

RAW SEQUENCE LISTING

DATE: 08/10/2006

PATENT APPLICATION: US/10/588,052

TIME: 11:05:24

Input Set : A:\44352-0011-00-US sequence listing(pct 05 235).txt

Output Set: N:\CRF4\08102006\J588052.raw

3 <110> APPLICANT: Lifenza Co., Ltd.

5 <120> TITLE OF INVENTION: PROTEIN WITH ACTIVITY OF HYDROLYZING AMYLOPECTIN, STARCH,
6 GLYCOGEN AND AMYLOSE, GENE ENCODING THE SAME, CELL EXPRESSING THE
7 SAME, AND PRODUCTION METHOD THEREOF

C--> 9 <140> CURRENT APPLICATION NUMBER: US/10/588,052

C--> 9 <141> CURRENT FILING DATE: 2006-07-31

W--> 0 <130> FILE REFERENCE:

9 <150> PRIOR APPLICATION NUMBER: KR2004-0006186

10 <151> PRIOR FILING DATE: 2004-01-30

12 <160> NUMBER OF SEQ ID NOS: 4

14 <170> SOFTWARE: KopatentIn 1.71

16 <210> SEQ ID NO: 1

17 <211> LENGTH: 647

18 <212> TYPE: PRT

19 <213> ORGANISM: Artificial Sequence

21 <220> FEATURE:

22 <223> OTHER INFORMATION: E. coli BL21(DE3)pLysS

25 <400> SEQUENCE: 1

26	Met	Leu	Leu	Ile	Asn	Phe	Phe	Ile	Ala	Val	Leu	Gly	Val	Ile	Ser	Leu
27	1				5					10					15	
29	Ser	Pro	Ile	Val	Val	Ala	Arg	Tyr	Ile	Leu	Arg	Arg	Asp	Cys	Thr	Thr
30				20					25					30		
32	Val	Thr	Val	Leu	Ser	Ser	Pro	Glu	Ser	Val	Thr	Ser	Ser	Asn	His	Val
33			35					40					45			
35	Glu	Leu	Ala	Ser	His	Glu	Met	Cys	Asp	Ser	Thr	Leu	Ser	Ala	Ser	Leu
36		50					55					60				
38	Tyr	Ile	Tyr	Asn	Asp	Asp	Tyr	Asp	Lys	Ile	Val	Thr	Leu	Tyr	Tyr	Leu
39	65				70				75					80		
41	Thr	Ser	Ser	Gly	Thr	Thr	Gly	Ser	Val	Thr	Ala	Ser	Tyr	Ser	Ser	Ser
42					85				90					95		
44	Leu	Ser	Asn	Asn	Trp	Glu	Leu	Trp	Ser	Leu	Ser	Ala	Pro	Ala	Ala	Asp
45				100				105					110			
47	Ala	Val	Glu	Ile	Thr	Gly	Ala	Ser	Tyr	Val	Asp	Ser	Asp	Ala	Ser	Ala
48			115				120						125			
50	Thr	Tyr	Ala	Thr	Ser	Phe	Asp	Ile	Pro	Leu	Thr	Thr	Thr	Thr	Thr	Ser
51		130					135					140				
53	Ser	Ser	Ser	Ala	Ser	Ala	Thr	Ser	Thr	Ser	Ser	Leu	Thr	Thr	Thr	Ser
54	145				150					155					160	
56	Ser	Val	Ser	Ile	Ser	Val	Ser	Val	Pro	Thr	Gly	Thr	Ala	Ala	Asn	Trp
57				165				170					175			
59	Arg	Gly	Arg	Ala	Ile	Tyr	Glu	Ile	Val	Thr	Asp	Arg	Phe	Ala	Arg	Thr
60				180				185					190			
62	Asp	Gly	Ser	Thr	Thr	Tyr	Leu	Cys	Asp	Val	Thr	Asp	Arg	Val	Tyr	Cys

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63	195	200	205
65	Gly Gly Ser Tyr Glu Gly Ile Ile Asn Met Leu Asp Tyr Ile Glu Gly		
66	210	215	220
68	Met Gly Phe Thr Ala Ile Trp Ile Ser Pro Ile Val Glu Asn Ile Pro		
69	225	230	235
71	Asp Asp Thr Gly Tyr Gly Tyr Ala Tyr His Gly Tyr Trp Met Lys Asp		
72	245	250	255
74	Ile Phe Ala Leu Asn Thr Asn Phe Gly Thr Ala Asp Asp Leu Ile Ala		
75	260	265	270
77	Leu Ala Thr Glu Leu His Asn Arg Gly Met Tyr Leu Met Val Asp Ile		
78	275	280	285
80	Val Val Asn His Phe Ala Phe Ser Gly Ser His Ala Asp Val Asp Tyr		
81	290	295	300
83	Ser Glu Tyr Phe Pro Tyr Ser Ser Glu Asp Tyr Phe His Ser Phe Cys		
84	305	310	315
86	Trp Ile Thr Asp Tyr Ser Asn Glu Thr Asn Val Glu Gln Cys Trp Leu		
87	325	330	335
89	Gly Asp Asp Thr Val Pro Leu Val Asp Val Asn Thr Glu Leu Asp Thr		
90	340	345	350
92	Val Lys Ser Glu Tyr Gln Ser Trp Val Glu Glu Leu Ile Ala Asn Tyr		
93	355	360	365
95	Ser Ile Asp Gly Leu Arg Ile Asp Thr Val Lys His Val Glu Met Asp		
96	370	375	380
98	Phe Trp Ala Pro Phe Glu Glu Ala Ala Gly Ile Tyr Ala Val Gly Glu		
99	385	390	395
101	Val Phe Asp Gly Asp Pro Ser Tyr Thr Cys Pro Tyr Glu Glu Asn Leu		
102	405	410	415
104	Asp Gly Val Leu Asn Tyr Pro Val Tyr Tyr Pro Val Val Ser Ala Phe		
105	420	425	430
107	Glu Ser Val Ser Gly Ser Val Ser Ser Leu Val Asp Met Ile Asp Thr		
108	435	440	445
110	Leu Lys Ser Glu Cys Thr Asp Thr Thr Leu Leu Gly Ser Phe Leu Glu		
111	450	455	460
113	Asn Glu Asp Asn Pro Arg Phe Pro Ser Tyr Thr Ser Asp Glu Ser Leu		
114	465	470	475
116	Ile Lys Asn Ala Ile Ala Phe Thr Met Leu Ser Asp Gly Ile Pro Ile		
117	485	490	495
119	Ile Tyr Tyr Gly Glu Glu Gln Gly Leu Asn Gly Gly Asn Asp Pro Tyr		
120	500	505	510
122	Asn Arg Glu Ala Leu Trp Leu Thr Gly Tyr Ser Thr Thr Ser Thr Phe		
123	515	520	525
125	Tyr Lys Tyr Ile Ala Ser Leu Asn Glu Ile Arg Asn Glu Ala Ile Tyr		
126	530	535	540
128	Lys Asp Asp Thr Tyr Leu Thr Tyr Glu Asn Trp Val Ile Tyr Ser Asp		
129	545	550	555
131	Ser Thr Thr Ile Ala Met Arg Lys Gly Phe Thr Gly Asn Glu Ile Ile		
132	565	570	575
134	Thr Val Leu Ser Asn Leu Gly Thr Ser Gly Ser Ser Tyr Thr Leu Thr		
135	580	585	590

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137 Leu Ser Asn Thr Gly Tyr Thr Ala Ser Ser Val Val Tyr Glu Ile Leu
 138 595 600 605
 140 Thr Cys Thr Ala Val Thr Val Asp Ser Ser Gly Asn Leu Ala Val Pro
 141 610 615 620
 143 Met Ser Ser Gly Leu Pro Lys Val Phe Tyr Glu Glu Ser Gln Leu Val
 144 625 630 635 640
 146 Gly Ser Gly Ile Cys Ser Met
 147 645

150 <210> SEQ ID NO: 2

151 <211> LENGTH: 1946

152 <212> TYPE: DNA

153 <213> ORGANISM: Artificial Sequence

155 <220> FEATURE:

156 <223> OTHER INFORMATION: E. coli BL21(DE3)pLysS

159 <400> SEQUENCE: 2

160	atgttgctga	tcaacttttt	catcgctggt	ctgggagtga	tatcactgtc	tcctattgtg	60
162	gttgctcgtt	atattcttcg	acgagattgc	actacagtta	cggctctgtc	ctcccctgag	120
164	tctgtgacga	gttcgaacca	tgttcagcta	gccagtcagt	agatgtgcga	cagtaccttg	180
166	tcagcgcccc	tttatatcta	caatgatgat	tatgataaga	ttgtgacact	ttattatctt	240
168	acatcgtcgg	gcacaactgg	gtccgtaaca	gcgtcttatt	cttctagtgt	gagtaacaac	300
170	tgggaattgt	ggtctctctc	ggctccggct	gcagatgctg	tcgagatcac	tggagctagt	360
172	tatgtagaca	gcgatgcata	tgcgacatac	gccacgtctt	ttgatatacc	tcttactacc	420
174	acgacaacgt	cgctcgtctt	tgctagtgcg	acttcaacat	ctagtctaac	cacaacatct	480
176	agtgtttcca	tttcggtgtc	cgtccctaca	ggaacagctg	caaattggcg	aggtagggct	540
178	atctatcaga	tcgtgactga	tagatttgca	cgcactgacg	gctccaccac	atatttatgc	600
180	gatgttaccg	atagggctca	ttgcggaggg	tcttatcagg	ggattatcaa	tatgctggat	660
182	tacatccaag	gcatgggctt	tactgctatt	tggatttctc	ctatagtggg	aaatattccc	720
184	gatgacaccg	gatacgggta	cgcataatcat	ggttattgga	tgaaagatat	cttcgccctg	780
186	aatacaaat	ttggtactgc	agacgatttg	atagcgttgg	ctacggaatt	gcataatcgc	840
188	ggcatgtact	tgatgggtga	tattgttggtc	aatcactttg	ctttctcagg	aagtcatgcc	900
190	gacgtggact	actctgaata	tttcccgtat	tcgtcccagg	attattttca	ttcattttgc	960
192	tggattacag	attactcgaa	tcagacaaac	gttgagcagt	gctggcttgg	cgacgatact	1020
194	gttcctctcg	tggacgtcaa	tacccaactt	gacaccgtga	aaagtgaata	tcaatcctgg	1080
196	gttcaagaac	ttatagctaa	ttactctatt	gacggcctaa	gaattgacac	cgtcaagcac	1140
198	gtgcagatgg	atttttgggc	accatttcaa	gaggctgcag	ggatttacgc	cgttggtgaa	1200
200	gtattcgacg	gtgatccatc	ctacacatgt	ccatatcagg	aaaatcttga	cgggtgtctg	1260
202	aattatcctg	tttattatcc	tgtcgtctct	gcgttttgaga	gtgttagtgg	gtcgggtctcc	1320
204	tcgttagtcg	atatgattga	tacgctcaag	tctgaatgca	ccgacactac	tctcctaggc	1380
206	tcctttctag	agaatcaaga	taatccgcga	ttccctagct	acacttctga	tgagtcttta	1440
208	attaaaaatg	cgatcgcttt	cactatgctc	tcagacggca	ttcccataat	ttattacggt	1500
210	caggagcaag	gcctcaatgg	tggaaacgat	ccctataatc	gagaggcgct	ttggcttacg	1560
212	ggctactcca	caacgtcgac	gttctacaaa	tacattgcgt	cgttgaatca	gattagaaat	1620
214	caggctatat	acaaagatga	tacttatctc	acatatcaga	actgggttat	ttattcggat	1680
216	tccacgacaa	tagcaatgcg	gaaagggttt	acagggaacc	aaataattac	ggttctgtca	1740
218	aatcttgagg	ccagtggcag	ttcgtacact	ttgacgcttt	cgaatacggg	atataccgca	1800
220	tctagcgttg	tatatgagat	cttgacatgc	acagctgtga	ctgtggattc	gtctgggaat	1860
222	ttggcagtgc	cgatgtccag	tggcctacca	aaagtctttt	atcaggaatc	gcaactgggt	1920
224	ggctctggaa	tctgctccat	gtagag				1946
227	<210> SEQ ID NO: 3						

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228 <211> LENGTH: 27
229 <212> TYPE: DNA
230 <213> ORGANISM: Artificial Sequence
232 <220> FEATURE:
233 <223> OTHER INFORMATION: L. starkeyi primer 1(sense)
236 <400> SEQUENCE: 3
237 tacagttacg gtcttgctcct cccctga 27
240 <210> SEQ ID NO: 4
241 <211> LENGTH: 21
242 <212> TYPE: DNA
243 <213> ORGANISM: Artificial Sequence
245 <220> FEATURE:
246 <223> OTHER INFORMATION: L. starkeyi primer 2(antisense)
249 <400> SEQUENCE: 4
250 ctctacatgg agcagattcc a 21

VERIFICATION SUMMARY

DATE: 08/10/2006

PATENT APPLICATION: US/10/588,052

TIME: 11:05:25

Input Set : A:\44352-0011-00-US sequence listing(pct 05 235).txt

Output Set: N:\CRF4\08102006\J588052.raw

L:9 M:270 C: Current Application Number differs, Replaced Current Application No

L:9 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:0 M:201 W: Mandatory field data missing, <130> FILE REFERENCE